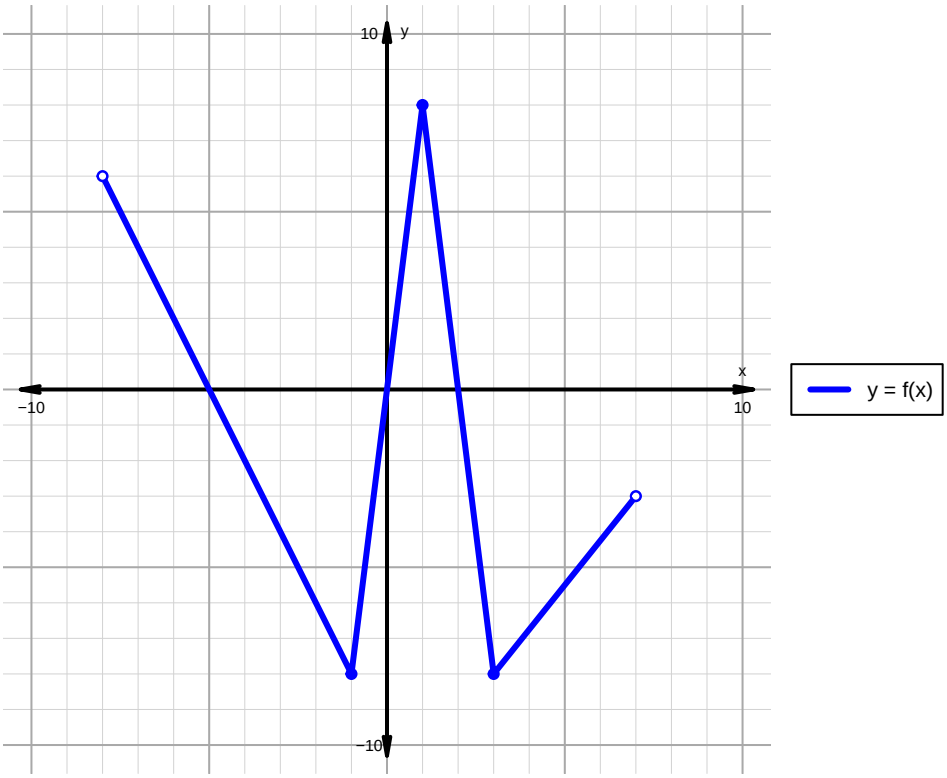
Name: Date:

Intervals, Transformations, and Slope Solution (version 121)

1. The function f is graphed below.

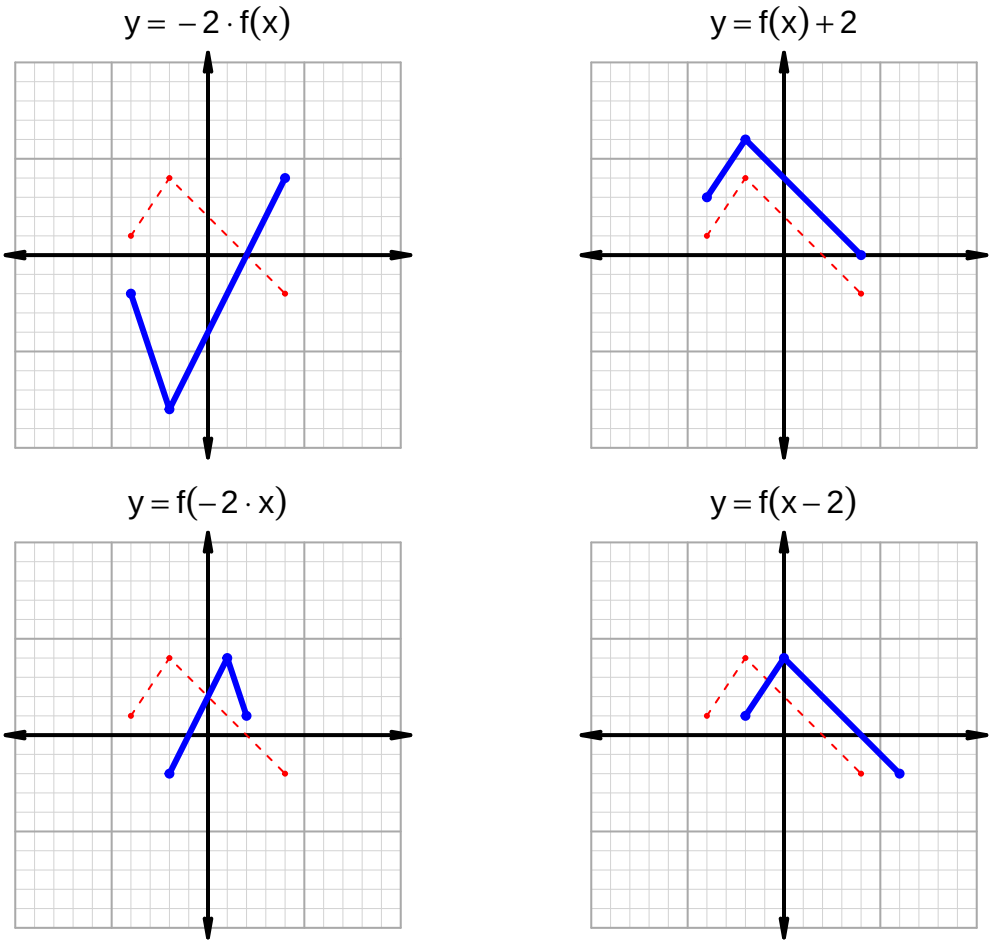


Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-8,-5)\cup(0,2)$
Negative	$(-5,0)\cup(2,7)$
Increasing	$(-1,1)\cup(3,7)$
Decreasing	$(-8,-1)\cup(1,3)$
Domain	$(-8,7)$
Range	$(-8,8)$

Intervals, Transformations, and Slope Solution (version 121)

2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 18$ and $x_2 = 33$. Express your answer as a reduced fraction.

x	$g(x)$
18	55
33	43
43	18
55	33

$\frac{f(33)-f(18)}{33-18} = \frac{43-55}{33-18} = \frac{-12}{15}$

The greatest common factor of -12 and 15 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-4}{5}$$